19980413.ba v02_n011.bam.980413

>From ???@??? Tue Apr 14 02:46:18 1998
Message-Id: <199804131536.KAA06739@sco.theporch.com>
Date: Mon, 13 Apr 1998 10:35:51 CDT
Subject: BOATANCHORS digest 2011

BOATANCHORS Digest 2011

Topics covered in this issue include:

Message-ID: <353111D3.EC94AD37@earthlink.net>
Date: Sun, 12 Apr 1998 12:11:15 -0700
From: Matt Parkinson <mattradi@earthlink.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: (no subject)
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

WBT I am lookinf or an R390 for sale not an R390a .Want this in working condition original meters top and bottom covers not nessary ., nice if you have them and cabinet would be nice to   thanks Matt Parkinson. KE6OUS 73s ! Have a nice Easter Sunday!

Message-Id: <199804121944.MAA15812@shell.wco.com>
From: "Captain Larry Rau" <rau@wco.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: My apologies
Date: Sun, 12 Apr 1998 12:38:47 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

I apologize to anybody for anything I ever did, said, thought or might have.

When I was a kid, people had opinions and they could express them privately (except during the McCarthy era)..it will take me a while to get used to this new (old) way of doing things...so bear with me.

Captain Larry Rau   W6WUH
Occidental California
95465
rau@wco.com

From: arc5@ix.netcom.com
Date: Sun, 12 Apr 1998 16:09:02 -0500 (CDT)
To: Old Tube Radios <boatanchors@theporch.com>
Message-Id: <19984121683116334@>
Subject: S-20 "Silver Dial" and Globe 300
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii

I usually don't list anything on this mail
reflector because I get so much flak, but
these are pretty rare items and I wanted to give
friends here first chance at them before
I list them on Ebay.

First is a beautiful, working Hallicrafters S-20
"Silver Dial" Sky Champion (the kind with the external dial)
vintage 1939. The power transformer and rectifier
have been replaced but it's otherwise clean and
original. Shiney paint. Original lettering intact,
except for half a "3". All original knobs.
The dial has some darkening or "patina" from
age but is still completely legable.
Works like a champ as I just aligned it.
Professional manual copy included.

You can see a photo of the rig at:
http://pw1.netcom.com/~arc5/s20.jpg

A close-up of the dial is at:
http://pw1.netcom.com/~arc5/s20dial.jpg

I will discuss offers over $170 between
now and Monday night.
After that it goes on Ebay.
Purchaser pays shipping from 78728.

Second is a "project" WRL Labs Globe 300 Transmitter.
Good case and front panel. Needs cover over VFO dial.
Internally needs work and finals, but is not rusted
or corroded. Needs a good tech, a diagram, a few parts
and a little elbow-grease. Transformers look OK,
but I can't test them.
Far too heavy to ship, you can pick it up
in Austin or I will bring it to Belton.
I will also buy the coffee and drive it
within 50-60 miles of Austin.

I will discuss offers over $60 between now
and Monday night. After that I'll offer it on
the newsgroups.

Please reply to me directly as I am
not presently receiving BA posts
(still working on my back email).

73 DE Dave Stinson AB5S
arc5@ix.netcom.com

Message-Id: <2.2.32.19980412214653.00b3df00@en.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Sun, 12 Apr 1998 17:46:53 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Allen Tucholski <allent@en.com>
Subject: Re: Grounds and Noise Clegg Thor 6

Same problem with my Clegg Thor 6. The Clegg chassis is that gold anodize coating or something.
I fired up this old classic receiver / transmitter with poor results. Hum on my transmitted signal. Hum on my receive signals. After looking at all the obvious, and finding nothing, I found by moving a 2 watt resistor on one of the tube sockets caused the hum to increase or decrease, but all soldering was excellent. No cold solder or anything like that. I added a temporary jumper from real chassis ground and the hum went away! I found the tube sockets riveted to the chassis were not really grounded. Some were 2 ohms to chassis ground. The worst case was the 12AX7 audio input tube socket. It was 10 ohms to ground. After finding this out, I scrapped away the gold anodizing, and soldered copper solder wick from socket to chassis ground. I did this on all sockets, since they all had many resistors and bypass caps soldered to them. The radio now works great! No more noise! It's all gone.

So if you have a Clegg or aluminum chassis, better check out those tube socket grounds. They were used as tie points for everything.

Allen

Message-Id: <199804122148.RAA05861@atl.org>
From: "Bob Duckworth" <wb4mnf@atl.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: S-20 "Silver Dial" and Globe 300

Date: Sun, 12 Apr 1998 19:03:42 +0100

| The power transformer and rectifier
| have been replaced

Replaced with ???
Thanks.
-bob
wb4mnf

Message-ID: <35315164.F7119C69@prtc.net>
Date: Sun, 12 Apr 1998 20:42:34 -0300
From: laffitte@prtc.net (laffitte)
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: FS HRO coils & rare BA
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi Gang!

Well, space has become a priority again and I just have too much stuff in too little a space. So the following items are for sale only:

HRO 60 coils A,C,D- In good working condition and cosmetically good-$33.00 each plus shipping.

HRO 60 coil B- One can is missing a padder so this one is good for spares-$15.00+ shipping.

HRO 5 coil B- Complete but untested-$20.00+shipping.

WWII Entertainment Pan American Tropical Radio- A 7 tube WWII superhet built by people from Crosley. It has many Crosley parts. It has seven spaces for spare tubes in the chassis so it looks like a 14 tube set from the top . Uses 115AC 60hz. This three band superhet was used as a navy entertainment receiver during WWII. There are very few left as I was able to identify three or four of them through this list and that includes this one. It is a rare receiver that uses a tuning eye and covers from 6.0 to 15.5 MHz in two bands. A separate band is the broadcast band. The antenna is a telescopic one about 5 feet when fully extented. The cabinet is navy gray and in good condition with no dents. The identification plate is missing in the front and there are two small holes where it used to be. A headphones jack was added to the front panel. Only a couple of the knobs look original but the set used originally brown round bakelite knobs. Electronically the set is working very well. It has been recapped.Audio is excellent with an internal

original speaker. The cabinet has the schematics pasted on the inside with the tuning instructions. You can see its twin brother in the Museum of Radio and Technology web site. For this receiver I will be accepting offers until next Thursday April 16. I will sell only if a reasonable offer is made. I usually never ask for offers in this forum but in this case and due to the rarity of this set I have made and exception.

Shipping from PR- I am asked many times if shipping from PR to the mainland is expensive or problematic. It is neither. PR is a US territory and as such the US postal service is the one in use. I have shipped BAs to the mainland by both Parcel and Priority without any mishaps.

Best of 73s to all,
Guido E. Santacana KP4FAR
BA collector in the tropics
San Juan, Puerto Rico 00926

Message-ID: <35315F0A.D158A197@internettport.net>
Date: Sun, 12 Apr 1998 19:40:43 -0500
From: Bill Wilson <billo@internettport.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: SX-28 Webpage
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I was glad to see the SX-28 web page. The SX-28 is a fine set, I've had three here. My current set is a SX-28A with no mods, no new caps (yet) and it works and plays fine. I got my first SX-28 about 5 years ago. It was a mess and looked ugly, missing pieces and so on. But I was glad to get the thing! I even had a baker make a SX-28 cake to celebrate, complete with big chocolate knobs! The second SX-28 came from a add in the ARC. I drove 4 hours up to TN. to pick it up on the 50th anniversary of D-Day back in 1994 listening to old broadcasts and music from that era on the car radio.

I noticed that there are two types of main tuning knobs for the radio: spoked-wagon wheel looking knobs and plain-jane round knobs. I ended up selling one to Gary Harmon when I found my latest SX-28 at a gas station two years back. One of the finest looking BA's ever made, IMHO.

Regards,

Bill
W4BIZ

Jacksonville, Al.

```
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From: k1om@world.std.com (Charles M Grandgent)
Message-Id: <199804130102.AA16575@world.std.com>
Subject: Re: RME DB-20's, temp snag
To: Old Tube Radios <boatanchors@theporch.com>
Date: Sun, 12 Apr 1998 21:02:37 -0400 (EDT)
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

For those who responded to my FS post for the two
RME DB-20 preamps,
I hit a temporary snag,
my PC blew a power supply or motherboard, I'm using another one now.
Until I recover the other PC, I'll be delayed in replying to
those responses, should just be a couple days,
I promise I'll get back to you...

   Chuck, K1OM

--
------------------------------------------------------------
Chuck Grandgent, PictureTel / MultiLink, Andover, Massachusetts
chuck@k1om.com  cgrandgent@multilink.com
(+1)978-691-2100  fax:691-2192  http://www.k1om.com
     *** "PCs - Automobiles for the mind." ***
------------------------------------------------------------

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From: n5off@w5ddl.aara.org
Date: Mon, 13 Apr 1998 01:05:08 UTC
Message-Id: <224188@w5ddl.aara.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Canucks: Free BC-348 Nameplate

I have a free namplate from a Canadian BC-348 to the first
VE or Canadian SWL to commit a SASE to me for it.

It reads:

DEPT OF NAT'L DEFENCE-CANADA
RECEIVER RADIO
PT NO BC 348   SER 1856
STK NO 5821-21-818-6394
```

This came from a rig that was overhauled by Marconi in 1969. I replaced the tag with an American one, so this one is free as stated above.

73 Tom Marcotte
111 Destiny Dr
Lafayette, LA 70506

PS postage will be about 2 oz worth.

73 N5OFF

Message-ID: <009b01bd6684$76577040$318a3ece@default>
From: "Robert Nickels" <ranickel@mwci.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: SP-600 finds a home
Date: Sun, 12 Apr 1998 21:30:37 -0500
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Hi All,

A stray SP-600 followed me home from Madison, the price was right, and those two big black eyes...I mean knobs...well you know...

The promise of the velvet-smooth dial provided the motivation to replace the evil black "beauty" caps. ALL were bad, most cracked wide-open, having previously returned the accompanying plate resistors to carbon-dust. My advice: don't hesitate, just replace 'em all!

Like the earlier SP-200 series, there are B+ bypass caps inside the three IF cans which often fail and must be replaced.   Here's a tip that saved time for me: remove the left-hand side panel.   It only takes a few minute and once you pull the IF cans and the side-panel, you have easy access to the innards of the IF cans without unsoldering any wiring.

I need a new S meter for the SP-600, though, the coil is wide open. This is a 2" round meter with both AF and RF scales marked "dB from1 microvolt" and "dB above 6 milliwatts", if you have one I'd sure appreciate hearing from you.   Also looking for the nameplate from the front panel, if someone has one from a junker.

Thanks and 73,

Bob W9RAN

Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: Tube info??
Date: Mon, 13 Apr 1998 02:47:49 +0000
Message-ID: <19980413024747.AAA22335@LOCALNAME>

Anybody out there have any ratings on the Amperex A-333 triode. It is about the size of an 810, has a graphite anode about the size of the 211,805 etc. series. They were used in diathermy machines. In all my tube books, I don't have these listed anywhere!

Would also like to locate 1 or 2 more of them somewhere.

73,
E. V. Sandy Blaize, W5TVW
"Boat Anchors collected, restored, repaired, traded and used!"
417 Ridgewood Drive
Metairie, LA., 70001

Again looking for a Hallicrafters SR-75 *
860 Hartley 'ECO' construction "on hold"**
*** Looking for a TRC-10 transceiver ******
*** Looking for an RAL receiver **********

Date: Sun, 12 Apr 1998 19:37:17 -0700 (PDT)
Message-Id: <2.2.16.19980412193648.333f4afe@pop.igc.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Dick Dillman <ddillman@igc.apc.org>
Subject: Military Generator Question
Cc: Edward Zeranski <ejz@nosc.mil>

When I purchased my yet to arrive AN/GRC-9 set I was offered a gasoline generator to go with it. I'd like this accessory but the unit offered was a GN-50. As I understand it the proper generator for the AN/GRC-9 is the PE-162 or PE-162(A). Can anyone confirm that this is correct? Does anyone know what set the GN-50 goes with?

Thanks,

Dick

Dick Dillman
<ddillman@igc.apc.org>
WPE2VT W6AWO
Collector Of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

Date: Sun, 12 Apr 1998 22:15:56 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: About grounds, shielded wire, etc., plus a little lecture
Message-ID: <Pine.SUN.3.96.980412211923.19535C-100000@indy2>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi, gang!

I see Hank is having ground woes; this is pretty coomon stuff, the causes and fixes of which Hank's got more experience with than just about any of us. He'll put it right and tell us how, and I don't know about you but *I'll* be looking at my h/p meters with Hank's next post in hand!

But similar troubles *are* terribly common, and always worth a good close look. Many of us were taught as an article of faith that "ground is ground is ground," a perfect infinite sink, as dependable as apple pie or Motherhood.

Well, it's not. Ohm's law applies here, and in spades; and so does all sorts of fancy network analysis, especially if the designer/constructor subscribed to the notion of the magic, perfect ground. *Always* suspect ground and grounding schemes; always look at it to see if there's some better way...and try to picture the ghost of Old Doc Ohm looking over your shoulder, waiting to give you a sharp rap to the head (or at least, in these PC days, a stern verbal rebuke) if you get it wrong.

Dealing with shielded wire, a number of constraints apply. Question one, is there sufficient stray field around that the use of it will do any good? Two, will the shunt capactity of the shielded wire affect performance adversely? (depends on source and load Z, and what you're running through the wire--RF is one thing, lower-freq stuff like AF another, and DC another still). Which end of the shield goes to earth is #3...and it's big fun. In serious nasty RF (etc.) fields, sometimes you have to eat the possible ground loops and ground both ends; otherwise, you

ground just one end, and the choice of source or load end should be governed by which end is closer to the actual ground point in terms of distance, resistance and impedance. ("Ground loops" are tricky things, often invoked but poorly understood--think of 'em as big, one-turn inductors, and ask yourself what that coil will couple to; analyzed from that perspective, you can often figure out ways to mitigate the ill effects).

I mess with two flavors of "shielded wire" all the time, wiring up a "chassis" (the entire TV transmitter site) bigger than most people's homes! In that sort of installation, two sets of rules apply: RF & video (which is, pretty near, wideband RF though HF, flat from DC to 40m near enough) runs in coax and both ends are usually grounded; you takes your chances and fixes loops as they crop up. Audio runs around in twisted pair, driven from a balanced or differential source to likewise loads and with an overall shield; there, shields get earthed at one and only one end, usually a terminal-block point of demarcation with a known connection to a ground of known characteristics. It works--and can easily be scaled down for application within a device.

For LF AC stuff (audio, etc.), balanced/differential signals on twisted pair will do an *enormous* amount of protection from stray sigs even *without* shielding, and entire radio studios (WBAA, Purdue University) and *all* telephone systems rely on this method--not too easy to do to a piece of gear under redesign but worth knowing. (It's the twisting that does it--for stray-coupled sigs, the two wires act like *one,* and the sig appears equally between both and ground...since the load side cares only about the *difference* between sigs on the two wires, the unwanted sig goes away. Well, not really, but it's substantially reduced, and we call that reduction the "common-mode rejection ratio." In good systems, it can be amazingly high!)

There are other weird noise-reduction schemes, things like "driven shields" and some active-cancellation tricks, which most folks don't have to worry about. (A driven shield is a neat trick if you can pull it off--you drive the shield backwards from the load end with the signal, from a low-Z source of perfect phase & gain flatness, and often hang a grounded shield outside that. Texts on instrumentation design go into this in great detail for those who might be interested. It's dull stuff if you're not so I'll dodge it here).

Last, a little lecture: just about everyone here is the kind of person who tends to swim against the current; we wouldn't be messing about with glowing firebottles and equipment old enough not just to vote but to collect Social Security if we were *not* a bunch of opinionated mavericks. Speaking one's mind is a fine, fine thing--but it might be best to take a hint from the days when folks went about armed and tended to use the fine grease of courtesy and mutual respect to make the bitter pill of opinion easier to swallow. It takes a little more work to call a fellow an ignorant lout *politely* while allowing him room to prove himself otherwise, but it's well worth it. The modern, Jerry Springer-esq

tendancy to use corase language and reject (usually similarly-phrased) discussion does not abide well next to the fine old radios we all love, most of 'em relics from a day when folks *did* put in the trouble to suggest that peers with whom they disagreed were "mistaken," instead of referring to them as some bodily orifice. All of us here have a lot more in common than not; and all of us hold our very own hard-won opinions dear. It can be difficult to "play nice;" but I think it pays off in the long run. (C-SPAN used to have good examples of how to rip someone's head off in the very nicest of ways--it may be the only thing congresscritters have to contribute, and is well worth watching if one wishes to aquire the skill).

   73,
   --Bobbi

   (I put in about 14 hours work this weekend, starting in the dead of night Sunday AM--*I* may be needing to work on those very skills, there's some uphill slogging ahead to get the final parts of the project done and the trail runs outside my little territory.... Arrgh, TeeVee takes too darn many folks to make it work!) (And *lost* a weekend of perfect outdoor weather both days and radio weather all three nights, grrrrrrr).

KB9GKX "RJ" rbarmore@indy.net   Roberta J. (Bobbi) Barmore
      FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
   Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

From: "Larry Johnson" <k5yf@wt.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Stupid Crystal Question
Date: Mon, 13 Apr 1998 04:33:14 -0000
Message-ID: <01bd6695$45d9bde0$a715ecd0@k5yf>
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Well, it's time for the stupid crystal question of the week. I think I know the answer, but since the answer is so simple, it can't be right.

My Hallicrafters HT-37 has a 32.5mc crystal in it to provide coverage from 28.5-29.0mc. Now, this is fine if the AM on 10m is at 28.8mc, but doesn't do me any good if they're at 29.2mc. To operate at different parts of the 10m band, you put in a different crystal, e.g., 32mc to operate 28.0-28.5, and 33mc to operate at 29.0-29.5.

Now, I want to operate 10m AM with this, so logic tells me that I should find a 33m crystal and do the realign process to set the 29.0-29.5 range.

The question is, will this cover the 10m AM part where I can expect to find everyone. In other words, will there be AM at 28.6, 28.8, 28.9? If so, then it seems to me, I should put in a crystal of 32.8mc (if there is such a thing) to set the range from 28.8 to 29.3. But then, is that adequate?

So, will a range of 29.0 to 29.5 cover me for 10m AM? What do the expert BA folks do?

Larry Johnson, K5YF
Houston, Texas USA
e-mail: k5yf@wt.net

From: gds@digitalexp.com (Reynolds, Jim)
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Bread slicer needed
Date: Mon, 13 Apr 1998 00:11:12 -0500
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Message-ID: <19980413051205487.AAA206@gds>

I need 3 Bread slicers.

450 puff, 4200 volt, 1/8 in spacing.
Anyone have an idea?

73

KI6UP
Jim Reynolds
Wewahitchka, Fl 32465
(25 miles from Panama City Beach)

Date: Sun, 12 Apr 1998 22:12:59 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
To: Old Tube Radios <boatanchors@theporch.com>
cc: boatanchors@theporch.com, baswaplist@foothill.net,
        Edward Zeranski <ejz@nosc.mil>
Subject: Re: Military Generator Question
Message-ID: <Pine.BSF.3.95.980412221239.16711D-100000@piobaire.mines.uidaho.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

>

> When I purchased my yet to arrive AN/GRC-9 set I was offered a gasoline
> generator to go with it. I'd like this accessory but the unit offered was a
> GN-50. As I understand it the proper generator for the AN/GRC-9 is the
> PE-162 or PE-162(A). Can anyone confirm that this is correct? Does anyone
> know what set the GN-50 goes with?
>
> Thanks,
>
> Dick
>
>
>
>
>   Dick Dillman
>   <ddillman@igc.apc.org>
>   WPE2VT W6AWO
>   Collector Of Heavy Metal:
>   Harleys, Willys and Radios Over 100lbs.
>
>
>
>
>

From: Ho4bart <Ho4bart@aol.com>
Message-ID: <b44b06c0.3531b0cb@aol.com>
Date: Mon, 13 Apr 1998 02:29:29 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: WTD schematic Miller kit radio 1930s
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

i would appreciate any kind of lead where a schematic
for a Miller (of LA CA and no relation) 5-valve receiver
4-bands built on tubes like 42, 6A7 in the mid-late 1930s,
might be published.
tnx, hue miller

From: Henry van Cleef <vancleef@netcom.com>
Message-Id: <199804130631.XAA16829@netcom12.netcom.com>
Subject: Grounding again
To: Old Tube Radios <boatanchors@theporch.com>
Date: Mon, 13 Apr 1998 00:31:35 -0600 (MDT)
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII

Content-Transfer-Encoding: 7bit

I think there is some confusion about the problems I am fixing in the Fluke meter. The diagnosis is that the bonding between the ring on the bottom of each Eby miniature tube socket and the chassis is not reliable. Since the ring has four solder terminals on it, there are unused terminals available on the socket ring. In the Fluke meter, there are plenty of nearby reliable grounds. The fix is to run a piece of bus bar from each socket ring to the nearby ground.

Somebody said something about shielded wire. I don't know why I would want to use that, when the objective is to bond the grounds properly. There has also been some discussion about ground loops. My experience has been that if there were as many problems with ground loops as there is talk about them, nothing would be grounded. I have rarely had to deal with ground current problems, and that generally in equipment that had a lot of power (Kilovolt-Amperes) involved.

We are not talking about new design here. The original design was, for the most part, quite adequate. To restore original performance, all that is needed is to restore the original design parameters. Using short straps of heavy bus bar (when compared to the currents involved) and placing all the ground currents in a large conductive sheet (the chassis) is not sticking your head in the lion's mouth. There is very little risk of running into problems with this type of solution. It is when you have significant impedances in the ground circuit that you run into problems. Things that produce "significant impedances" are skinny wires, long distances (feet) even if the wires aren't skinny, and the dimensions of the problem are generally a function of the magnitude of the ground currents involved. In the case of a Fluke meter, the largest current is the heater current (300 ma.) in each tube. Other currents in signal tubes are generally on the order of 10 ma. Response of the circuits is probably on the order of 4 Mhz. in this meter, so if the ground noise has frequency components above that frequency, it will probably never be noticed, unless it is huge (a parasitic oscillation tends to be "huge").

In new design, one does have some choices for dealing with noise. What are the characteristic impedances in the circuit is a first question to ask. A grounded-cathode amplifier (i.e., what folks think of as "conventional") vacuum tube circuit has a the tube grid, which generally is super-high impedance (the value of the grid leak in most cases), and the plate circuit, which is also a super-high impedance, particularly for tetrodes/pentodes. RG-58 is 50 ohms, and point-to-point wiring is on the order of 150 ohms, so most tube circuits operate with a whopping impedance mismatch (and many would not work if they didn't). If the electrical length of the wiring in an HF radio were not short compared to the propagation time of the

signals (around 9-10 inches/nanosecond for most wiring), the radio would be in trouble. One very good way of dealing with electrical noise in a high-field environment is to design the input and output circuits to work as balanced differential circuits, set the impedances at each end, and use the same characteristic impedance in the wiring between the circuits. Twisted pair in the wiring helps, because any induced signals appear in both wires. The downside is that these are common-mode signals, which may be large, and the circuits have to have good common mode rejection. Good Faraday shields in the right places can help, and one right place is in the cabling----shielded twisted pair is jim dandy, and works well with only one end grounded most of the time.

While it's going a little further into the theoretical realm than probably most folks really want to, a good understanding of the interactions between electricity and magnetism will clear up 80% of ground problems. Of course, this walks into the old political problem that Clerk-Maxwell's work, which is pretty fundamental physics for dealing with a lot of electrical questions, is "graduate level" in EE programs, so the poor BSEE is walking out the door with cookbook stuff instead of good theoretical stuff to apply to problems. WWII radar stuff did make some very good use of this theory----it explains how come square water pipe (waveguide) can carry balanced signals without attenuating them seriously, and why we talk about "E-plane" and "H-plane" with them. Most microwave technicians have a good working knowledge of Clerk-Maxwell's ideas, which were built on Faraday's work. The book I learned from is Haight, "Engineering Electromagnetics," McGraw-Hill, in the EE series, and it is a good text because it presents vector algebra very well before using it to quantify the effects being presented in the book.

Ground circuits behave according to the same laws of physics as any other circuits, and it is well to keep that in mind. The key parameter in many circuit analyses is current quantities, and you can ignore voltages. Analyze your ground questions in terms of current flow. Kirchoff's current law says the sum of the currents in a closed system adds up to zero. What that means is that in a typical radio with an 80 rectifier pumping out 125 ma. at some voltage, that 125 ma. goes out to all sorts of points, and there are things like decoupling resistors in screen circuits and plate circuit feeds providing "AC ground" by being connected through a bypass cap to ground, etc. etc. That 125 ma. is flowing in the ground circuit. Supposedly, there is no voltage, although in truth there always is, even if you are talking about milliamperes and pico-ohms----just you can't measure it with your Simpson meter. Those bypass currents are all flowing in the ground circuit----and they are being supplied through the B+ lines. Think "current" rather than "voltage" and you'll be ahead of the game. Remember that the currents through RG-58 operating properly are

balanced between the the center conductor and shield----they are equal
and opposite.

I think that when dealing with small electronics power supplies (and
an 80 or 5Y3 is "small") just wire it up, and try it. No. 18 and 14
bus wire does quite well most of the time, and some of the early AC
receivers (as well as some of Zenith's plastic chassis jobs) actually
use a bus for B-return instead of putting it into the chassis---with
no problems. I think that when worrying about "ground loops" one
might consider just how many "ground loop" problems aren't created by
B+ distribution wiring.

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Hank van Cleef
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From: Ho4bart <Ho4bart@aol.com>
Message-ID: <36d34bf9.3531b1ea@aol.com>
Date: Mon, 13 Apr 1998 02:34:16 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: What be a CU-701 / WRA-1 ???
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

CU-701 / WRA-1 Transmission Line Coupler
2-22 mc/s in 6 bands, one 6CL6 tube
built in small AC supply
one tuned circuit fed by coax going in and coming out
National vernier knob on tune cap, complete with Nat'l
diamond on front panel as marker
so what is this thing???
6CL6 usually seen as vfo bulb, but no feedback provisions
that i saw in this plus has goesinta and goesouta coax leads.
tnx, hue

Message-Id: <3.0.5.32.19980413072254.007b8400@mail1.telalink.net>
Date: Mon, 13 Apr 1998 07:22:54 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: Tom Norris <badger@telalink.net>
Subject: pe-102: YetAnother Military Generator Question
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Yet another generator question. Can anyone help

PT with his generator problem?

RESPOND TO PT, NOT TO ME.....

Tom

>From: "P.T." <snowshoe@dimensional.com>
>
>I have a pe-102 gasoline generator unit.
>I got it from my fathers estate he had an idea for it that never
>materialised so there it was still on the shipping palate never fired up
>and I just could not throw it away.
>
>so I have a question do you know anything about it or can suggest where
>I can find info on it?
>This is a description it has a 2 cycle Kohler 1cylinder engine with a
>shielded spark system and the output is labled 550volts dc and 6.3 volts
>dc.
>Thanks for any information,
>Paul w0od
>snowshoe@dimensional.com
>
>

Message-Id: <v03102805b157ab70cb05@[134.53.65.12]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Mon, 13 Apr 1998 07:47:01 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Jim Garland W8ZR <4CX250B@miavx1.acs.muohio.edu>
Subject: R390 Cabinet question

Hi Gang,

Anybody know if the stock cabinet for an R390 will fit an R390A?

Thanks,

Jim Garland W8ZR

Message-Id: <v03102806b157abbadca3@[134.53.65.12]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Date: Mon, 13 Apr 1998 07:48:29 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Jim Garland W8ZR <4CX250B@miavx1.acs.muohio.edu>
Subject: HX50 value

I've got a chance to rescue a Hammarlund HX50 from a CBer. The rig looks
in good condition, but I've no idea what it's worth. Any suggestions?

Thanks,\

Jim W8ZR

Date: Mon, 13 Apr 1998 09:28:02 -0400
From: Brian Bjerkelund <brianbj@compuserve.com>
Subject: WTB SX-28A Cabinet
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <199804130928_MC2-39B7-C01F@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: quoted-printable
Content-Type: text/plain; charset=ISO-8859-1
Content-Disposition: inline

Howdy Gang:

Looking for a cabinet for a 28A......need not be perfect or even nice. =

I'll consider a parts radio if you want to be rid of the whole thing.

Thanks and 73,

Brian, K7AIS

To: Old Tube Radios <boatanchors@theporch.com>
From: "A. B. Bonds" <ab@vuse.vanderbilt.edu>
Subject: More on SX28 resto
Message-Id: <1998Apr13.102846-0500@spike.vuse.vanderbilt.edu>
Date: 13 Apr 1998 10:28:44 -0500
MIME-Version: 1.0

This seems to be a fairly common activity these days, but then there
is a lot to restore.

Observations:

The unit in question is an SX-28 of fairly early vintage, has
uninsulated power resistors. Cosmetically clean, functioned only

weakly. I noted that the power transformer had been replaced, as well as several wax caps. My guess is that leakage killed the transformer.

Every wax cap in this unit tested suspicious. Even the blue kinda plastic Aerovox replacements were not reading well. I use an old Heath magic eye cap checker, which does HV leakage tests. Most caps were a little leaky, some terribly so. All of them would not read strongly, i.e., even at the best bridge balance the eye did not open very far, if at all. Replacement caps checked fine. Many of the waxies were melted to the point that the innards were loose in the tube.

Bottom line: Replace ALL of the wax caps, even if they look OK. They will fry sooner or later. See my earlier post on getting to the RF deck. My primary amendment to that is that three of the four modules must be removed completely for reasonable access, the total job takes 8-10 hours.

About half of the resistors were not in spec, given the rated tolerances. Most read too high, a few read too low (by a factor of ten in some cases). About a third (of the total) were sufficiently far off to justify replacement, a non-trivial pursuit.

General rules: Any resistor used for screen dropping (with a bypass cap) will be bad, due to excessive current through the bad bypass cap. Any 1 meg resistor will read at least 1.5 megs. The plate resistor for the S-meter amplifier will be way off. It is 27K, rated at 2 w. Mine read 73 k. The load on this resistor varies with rf strength, but it can be as high as 3.5 w. Miraculously, none of the other power resistors were bad.

Bottom line: Check all resistors. In nearly all cases, you will not have to remove an end to do so.

General observation: Halli construction of the era was very robust. Leads are very tightly wrapped, and often crowded on a lug. The chassis is deep and crowded, so there is a tendency to blow off a replacement because it looks impossible. It is not impossible, and if you don't do it, that component will be sure to fail next. The situation reminds me of the OB-GYN doctor who retired and took a course in auto mechanics. For his final project, he showed the instructor a car in which he had done and entire engine rebuild. He was especially proud of the fact that he had done the whole job through the tailpipe....

73, and stick with it A. B. Bonds

End of BOATANCHORS Digest 2011
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